Testimony of Don Anair for
Informational Hearing of the Senate Transportation and Housing Committee
Meeting the Goals of AB32: Fuels of the Future
October 24, 2011

Good afternoon Chairman and members of the committee. Thank you for the opportunity to speak this afternoon. My name is Don Anair and I'm a vehicles engineer with the Union of Concerned Scientists. The Union of Concerned Scientists is a leading science-based non-profit working towards a healthy environment and a safer world.

Climate change is the most serious long term environmental threat facing our state, our nation, and the world. As a Californian, I'm proud that our lawmakers, regulators and citizens have voted time and again to back efforts to take this problem head on and we must not hesitate to do so when it comes to our transportation fuels. Climate science tells tell us that we must cut global warming pollution at least 80% to help avoid the worst consequences of global warming[1] and the economics tell us that light-duty vehicles must lead the way with more than a 90% reduction.[2]

When looking at our national transportation and climate landscape out to 2050, our future becomes clearer.

First, California is leading the nation on climate solutions. Thanks to the leadership of our legislators and that of Mary Nichols and the ARB, our state greenhouse gas vehicle standards are going national, and we are helping to take a baseline of unabated emissions growth and cut that in half by 2050. (See Figure 1 below.)

But, there is still a long ways to go to fill the gap between where we are going and where we need to be. The only way to fill that gap is to shift from cars that burn oil to cars that don't—and that means pushing for low carbon fuels starting today.

With continued CA leadership, the state and the nation can reach this goal. This will require a suite of coordinated, performance-based policies that move our transportation system away from oil and towards hydrogen, electricity, and sustainable biofuels that must be increasingly from lower carbon sources. If we continue to pursue and improve on these policies, we can

[1] http://www.ucsusa.org/assets/documents/global_warming/emissions-target-report.pdf).
[2] http://www.roadmap2050.eu/

meet the long-term goals of reducing our global warming pollution and we can strengthen our economy and create jobs while we do it.

First, by 2040, 3 out of every 4 new vehicles sold will need to be zero-emission vehicles powered by clean, low-carbon hydrogen or electricity.[3] Typically, new automotive technologies take 15 to 20 years to reach this level of market share. That's why the Zero Emission Vehicle technology program needs to support a market of at least 1.8 million plug-in hybrids, battery electric, and fuel cell vehicles between 2018 and 2025 to ensure vehicle technology is on the right track.

Second, we need to maintain and expand a strong LCFS, which is getting easier and easier to reach thanks to progress in other industries. Projected fuel use will be cut 180,000 barrels per day by 2030 thanks to CA and national vehicle global warming vehicle standards—lowering the bar for oil companies under the LCFS.[4] Electricity and hydrogen must be made from 33% renewables thanks to efforts by you and your past colleagues, further lowering the bar for oil companies. In fact, with those policies and a strong ZEV vehicle mandate, electricity and hydrogen demand from advanced vehicles could account for meeting at least 20% of LCFS requirements by 2020.[5]

Now the oil companies have to step up and do their fair share. The LCFS will ensure fuel providers are making investments in biofuels and the other fuels of the future just as automakers and CA utilities are making investments in vehicle technology and renewable electricity.

Third, oil companies must also step up through the Clean Fuels Outlet to ensure that consumers have access to fuel for these advanced technology vehicles as they come to market. California can and must continue to support biofuels, hydrogen, and electricity as transportation fuels through evolving AB 118 vehicle and infrastructure incentives programs, but it is the oil industry that is sitting on years of record profits and they must give back by directly financing

[3] UCS analysis shows 70 to 80% of new vehicles sold in 2040 will need to be powered by low carbon hydrogen and electricity to reach an 80-90% reduction in light-duty vehicle emissions by 2050.
[4] Based on estimates of the global warming pollution and fuel economy standards announced by California and the Obama Administration to achieve the equivalent of 54.5 miles per gallon by 2025.
[5] Low Carbon Fuel Standard ISOR Scenario 3 assuming 1 million EV, PHEVs and ZEVs on the road by 2020 http://www.arb.ca.gov/regact/2009/lcfs09/lcfsisor1.pdf

infrastructure for hydrogen and other fuels that will support both the LCFS and a strong ZEV program.

Finally, as demand for electricity and hydrogen increases, the Renewable Portfolio Standard and renewable hydrogen requirements[6] must continue to evolve and strengthen well beyond the 33% renewable requirements on the books today to ensure that we are not simply moving emissions from the tailpipe to the power plant or refinery.

Transitioning away from a petroleum-based transportation system, with its dependence on foreign oil sources and global market swings, will help make California's economy more robust.

A study released by the organization NEXT10 earlier this year showed how fuel savings expected from global warming standards for vehicles will be pumped back into California's economy, estimating an increase of more than 100,000 jobs in 2025 across all sectors of our economy.[7] Investments in renewable electricity as a result of policies like the RPS, are estimated to have similar benefits to California's job market, increasing jobs by the tens of thousands.[8] Investments in advanced vehicles, advanced fuels, and the infrastructure to support them will create additional employment growth opportunities.

There is no doubt transitioning to the fuels of the future will pose challenges, given our over reliance on petroleum for more than 100 years. In addition to the technological progress I've already discussed, we will need to reduce the amount Californian's rely on their cars, through Smart Growth policies like SB375. But, if we move aggressively ahead with policies that drive advancement in advanced vehicle technologies, renewable energy and lower carbon fuels, we can make sure we put California on a long term path to meet our climate goals and transform our transportation systems, while creating a more robust economy along the way.

---

[6] SB1505 Renewable Hydrogen Requirements

[7] Roland-Holst, David, *Driving California's Economy: How Fuel Economy and Emissions Standards Will Impact Economic Growth and Job Creation*. May 2011. http://next10.org/next10/publications/vehicle_efficiency.html

[8] Roland-Holst, David , *Energy Pathways for the California Economy.* June 2009 http://www.next10.org/next10/pdf/PDF_energy/energy_pathways_exe_report.pdf

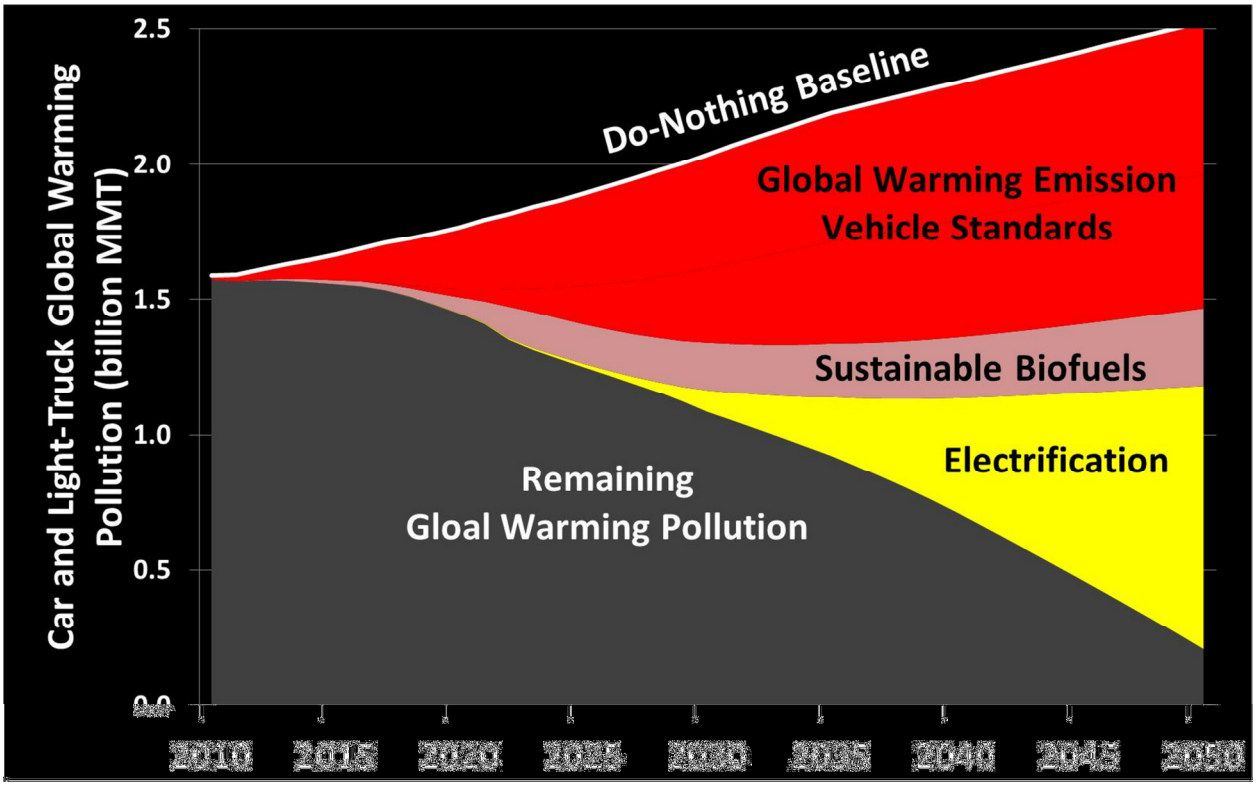

Figure 1: Estimate of the potential contribution to light-duty vehicle global warming emissions reductions from different fuel, vehicle, and travel reduction pathways based on modeling performed for *Climate 2030: A National Blueprint for a Clean Energy Economy*.